

# Transposition with Fusion of Maxillary Incisors in Primary Dentition: A Report of a Rare Case

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A 5-year-old healthy female patient presents to a private dental clinic in Bangalore for her routine dental visit. Physical and extra-oral examination did not reveal any abnormalities. The clinical intraoral examination revealed the presence of enlarged clinical crown in the area of maxillary right incisor region. The extra large teeth had labial and palatal vertical grooves and were not affected either by dental caries or periodontal problems. On closer inspection of her right upper central and lateral incisors, transposition and partial fusion of these teeth were well appreciated and they were joined from the cement-enamel junction for approximately 6mm and then separated at the incisal edge for 0.5mm. No other anomalies were found [Table/Fig-1,2&3]. Her family history was unremarkable for any history of abnormal tooth formation or intraoral issues. A provisional diagnosis of primary double teeth (fusion) with transposition involving 51 and 52 (FDI System) was made.

Intra oral periapical radiographic examination of maxillary anterior region revealed that teeth 51 and 52 were transposed and partially fused and the right maxillary permanent lateral incisor was absent [Table/Fig-4]. The radiograph of involved teeth showed two distinct fused crowns with individual pulp chambers and separate root canals with normal size. It was also observed that the position of 51 and 52 was interchanged confirming the transposition of the fused teeth. Maxillary anterior occlusal radiograph also revealed similar findings [Table/Fig-5].

Thus the clinical and radiographic examination confirmed the diagnosis. The patient's parents were informed about the anomaly and absence of permanent successor. They were also explained regarding the importance of follow-up at regular intervals.

Tooth transposition is the positional interchange of two adjacent teeth, or the development or eruption of a tooth in a position occupied normally by a nonadjacent tooth within the same quadrant of the dental arch [1].

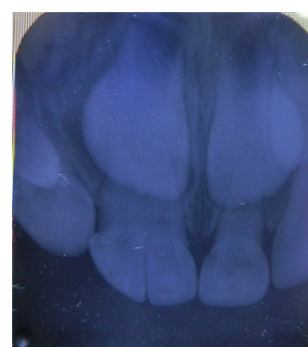
Transposition in primary dentition has been less reported in dental literature. The present case is very rare and interesting as there is transposition along with fusion of maxillary right primary central incisor and lateral incisor. The etiology of tooth transposition remains unclear, however genetic involvement and interchange in the position of the developing dental lamina of the involved teeth are the two main theories proposed to explain its etiology [2,3]. Primary teeth anomalies can affect the permanent successors significantly which has been clearly demonstrated in this particular case as there was a congenitally missing permanent right lateral incisor.

In the present case there was fusion associated with transposition of primary right central and lateral incisor. When fusion occurs, there are certain dental concerns which may arise. Fused teeth are generally wider than the adjacent teeth, thus might compromise the esthetics especially when it affects the maxillary anteriors. In the present case, there was a slight distolingual rotation of transposed primary maxillary right central incisor. Usually when there is occurrence of fusion, it could result in excess dental space. In the present case, that was not an issue as there was no excess space available. The surface contour of fused teeth commonly exhibit labial and lingual grooves running vertically on the crown surface. These grooves were pronounced in the present case and were difficult to clean as there was incomplete fusion of central and lateral incisor. However these grooves did not exhibit any dental caries at the time of examination.

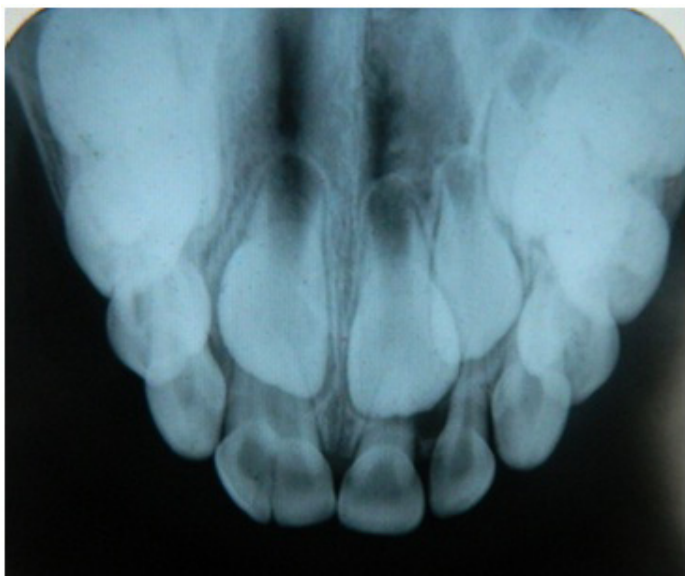
The presence of fusion in primary teeth could lead to delay in the resorption of its root due to increased root mass and root surface area relative to the size of the permanent successor crown [4].



**[Table/Fig-1]:** Intra oral frontal view of transposition with fusion in primary dentition.



**[Table/Fig-2]:** Intra oral lateral view of transposition with fusion of primary right central and lateral incisor. **[Table/Fig-3]:** Occlusal view of fusion with pronounced buccolingual groove along with transposition. **[Table/Fig-4]:** IOPA radiograph of maxillary anterior region.



[Table/Fig-5]: Maxillary anterior occlusal radiograph.

This may lead to delayed or ectopic eruption of the permanent successor.

Treatment of transposed and fused tooth will depend on the clinical situation [5]. In the present case, the parents were well informed about the existing anomaly and the importance of periodic clinical and radiographic follow-up for early intervention and necessary treatments at appropriate time intervals. The necessary treatments includes application of fissure sealants on the grooves between

the two fused teeth, routine fluoride application, monitoring the root resorption of fused teeth and surgical intervention at the appropriate time to prevent delayed exfoliation and eruption of the successors [6]. The treatment of congenitally missing permanent maxillary lateral incisors is very challenging and complex, requiring very careful case selection, treatment planning, and often the coordinated interdisciplinary efforts of the Pedodontist, Orthodontist, Periodontist, Oral Surgeon and Restorative Dentist. The two categories of treatment options for congenitally missing maxillary lateral incisors include space closure with canine substitution and space opening with prosthetic replacement [7]. Therefore, it is imperative to manage these patients from an interdisciplinary diagnostic and treatment perspective and the most favored option for the patient can be selected based on the clinical situations on long term follow-ups.

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